



## The effect of remittances prior to an election

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## THE EFFECT OF REMITTANCES PRIOR TO AN ELECTION

**Jean-Louis COMBES, Christian EBEKE, Mathilde MAUREL**

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## **Abstract**

This paper focuses on the relationships between remittances, elections, and government consumption as a percentage of GDP. We combine data from the National Elections across Democracy and Autocracy (NELDA) dataset compiled and discussed in Hyde and Marinov (2012) and the World Development Indicators dataset. We focus on 70 young democracies in the developing world. The period under investigation is 1990-2010.

The main objective of the paper is to assess whether remittances have an influence on the political manipulation, which may occur prior to an election, through an increase in the government consumption-to-GDP-ratio. It appears that remittances dampen the political business cycle (PBC). Furthermore, the PBC is reduced up to the point where it is fully cancelled out at a remittance threshold of 10.7 percent of GDP. Those findings are robust to different econometric strategies and robustness checks.

JEL Classification: F24, F22, O15.

Keywords: Political Business Cycles, Remittances

## **1. Introduction**

According to the recent World Bank Report (World Bank “Migration and Remittances Factbook”, 2011), the worldwide remittance flows are estimated to have exceeded \$440 billion in 2010. From that amount, developing countries received \$325 billion. The Report also highlights that recorded remittances were nearly three times the amount of official aid (ODA) and almost as large as foreign direct investment (FDI) flows to developing countries. For instance in Sub-Saharan Africa, remittances range from less than 1% of GDP to 25% in Lesotho, and they exceed by large both FDI and aid in countries like Mauritius, Nigeria, Egypt, Morocco, Senegal and Lesotho. Ratha (2009) summarized all existing empirical evidence and conclude that for a large fraction of the poorest nations, remittances exceed both ODA and FDI. A vast literature has highlighted the contrasted macroeconomic consequences of remittances for recipient countries on investment and growth (Chami et al., 2003; Bhaskara Rao and Mainul Hassan, 2011), consumption (Itzigsohn, 1995; Chami et al., 2003, 2005), and poverty (Combes, Ebeke, Maurel, 2012). Micro studies provide also an evidence of mixed results reflecting the positive effects of remittances, which act as an insurance (Aggarwal and Horowitz, 2002; Gubert, 2002; Frankel, 2011, among others) and negative effects due to moral hazard (Funkhouser, 2006; Cox-Edwards and Rodriguez-Oreggia, 2009, Bansak and Chezum, 2009, among others).

In contrast to ODA and FDI, remittances embodies the movement of individuals, which may imply a strong moral, therefore political dimension. The literature on the political importance of migration is recent, and it is now well-documented, ranging from the impact of migration on democracy (Spilimbergo, 2009, Docquier and al., 2010), on norms - like fertility norms (Bertoli and Marchetta, 2012) and female political empowerment (Lodigiani and S. Salomone, 2012) and more broadly on institutions (Beine and Sekkat, 2012). A substantial part of this literature comes from political science. In that literature, one key issue is to identify who is the vector of migrants’ political influence. A first vector can be political activists and elites, educated abroad, who hold the responsibility for importing policies from foreign countries. A second vector is non-elite but nevertheless specialized or skilled migrants, members of organized diasporas and students educated abroad for instance, who can influence policy choices. The influential work of Spilimbergo (2009), showing that only skilled migrants in democratic countries are capable of promoting democratic diffusion, belongs to this latter category. The third and last vector is the mass public, like the many ordinary Mexicans residents in the US, who adopt more democratic attitudes and habits and subsequently diffuse those attitudes in their origin country (Perez-Armendariz and Crow,

2012). Our study is based also on the belief that democratic life is shaped by mass public opinion. Therefore we do not emphasize exceptional (or even more educated) actors, but ordinary people who vote.

While migrants' behaviors have been extensively scrutinized, the political role played by remittances has been relatively neglected. Several papers investigate two causal relations, running from politics to remittances and *vice et versa*. First, political systems can influence the amount of remittances. Using a panel of remittances of 109 developing countries from 1990 to 2005, and the 2000 and 2006 Mexican Presidential elections, O'Mahony (2012) provides evidence that remittances are more important in election years, this effect being even greater the more competitive the election. The causality is running the other way around as well. Remittances cause the quality of institutions. According to Abdid *et al.* (2012), remittances, as an exogenous source of income, deteriorate the institutional quality. They strengthen the financial independence of recipient households and hence relax the control exercised by citizens over the public action and lead to greater corruption. Nevertheless, this moral hazard effect of remittances is disputed. Docquier *et al.*, (2011) demonstrate that emigration impacts the political structure through the presence of return migrants from democratic countries (see also, Batista and Vicente, 2011). This effect is channeled through the exit option provided by migration but also through the exchange of ideas within the diaspora and between households and their relatives abroad. It is likely that communication and remittances are joint products: tighter financial ties mean more information exchange on cultural, technical but also political innovations. The international diffusion of better political practices through the migration network could be interpreted as a major positive spillover effect of globalization.

The purpose of the paper is to put in light an effect of remittances on political systems through an original channel: the Political Budget Cycle (PBC). Section II presents the theoretical framework, which consists in adapting the PBC model to the presence of remittances. We make the usual assumption that governments are more likely to be re-elected when they are either competent or whenever they can manipulate myopic or sub-informed voters by engineering spurious good economic conditions prior to the election year. In the latter case, their room of maneuver is shown to be limited by globalization: the type of exchange rate regime and the extent of trade openness. O'Mahony (2012) uses interaction terms to test the hypothesis that PBC are weakened in more open countries and where

exchange rates are flexible. In a similar vein, we investigate whether remittances, as a key dimension of financial flows to developing countries, dampen or not PBC.

Furthermore, it has been shown also that international aid and the presence of a natural resource increase the desire of a government to be re-elected and the incentive to engage into fiscal manipulation. In a complementary way, Faye and Niehaus (2011) have shown that aid is bigger in election years, and even bigger in more aligned countries. From the PBC perspective, remittances have specific characteristics that strongly distinguish them from foreign aid: they are not channeled by public budgets, they are small financial transactions and they can involve information flows between recipients and donors.

The rest of the paper is organized as follows. Section 2 lays out the theoretical arguments for a potential effect of remittances on the magnitude of the PBC. Section 3 describes the baseline econometric strategy and discusses preliminary results. Section 4 proposes a number of robustness tests. Section 5 concludes.

## **2. The theoretical arguments: Remittances and political budget cycle**

In this paper, the political influence of remittances is embedded in the PBC theoretical framework. A vast literature applies the PBC theory in advanced countries (*e.g.* Alesina et al., 1997; Drazen, 2001) or developing countries (Schuknecht, 1996, 2000; Kraemer, 1997; Khemani, 2004); as well as a worldwide sample of countries (Shi and Svensson, 2006). This literature assesses the influence of the electorate calendar on fiscal variables. Opportunistic incumbents can manipulate fiscal instruments thereby increasing the probability of their reelection, provided the existence of information asymmetries on the competence of the incumbent, as modeled by signaling or moral hazard games (Rogoff and Sibert, 1988; Persson and Tabellini, 1990).

Two issues must be addressed by the empirical setting. The first one concerns the definition of the distorted fiscal variable. The simplest hypothesis is to consider the government surplus (Shi and Svensson, 2006) assuming that tax cuts or public spending booms increase the welfare of voters. This assumption will hold under the condition that myopic voters are not going to penalize the incumbents, who deteriorate public finances to satisfy the lobbies (Drazen and Eslava, 2005). But in most cases voters are conservative, or they become more conservative by learning how a democracy is functioning.

A more realistic hypothesis is to focus on the composition of public spending. The incumbent can increase the share of “visible” public spending before elections: current

spending (Rogoff, 1990) or investment spending (Eslava, 2005). Current spending is assumed to be immediately “visible” and to benefit to the median voter, while investment spending is considered as private information and is manipulated through targeting specific groups of interest. Vergne (2009) focuses on the political economy of public spending and on the modification of its composition prior to election years. In this paper, we consider government consumption over GDP.<sup>1</sup>

The second concern is about the heterogeneity of the PBC across countries, which calls for a large set of control variables. Pre electoral manipulations depend on various factors: age of democracy (Brender and Drazen, 2005), access to medias (Shi and Svensson, 2006), level of GDP per capita ((Brender and Drazen, 2005), institutional characteristics (Shi and Svensson, 2006), exchange rate regime (O’Mahony, 2010), trade openness (O’Mahony, 2006)?, natural resources endowments (Vergne, 2009), and foreign aid (Faye and Niehaus, 2011). To the best of our knowledge, remittances have not been considered yet as influencing the PBC.

The incumbent’s incentives to manipulate fiscal variables before elections result from an arbitrage between benefits and costs. Shi and Svensson (2006) show that the higher the appropriable resources (oil, mineral, and foreign aid), the stronger the political benefit from biased election outcomes. In a different but complementary approach, Faye and Niehaus (2011) demonstrate that foreign aid is provided to more aligned countries during election years. Both arguments support the idea that aid will promote more political manipulation during competitive elections. In contrast to foreign aid, international remittances are not

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<sup>1</sup> We also tried to use the public investment variable, but we did not find any robust relationship with elections in our sample, what suggests that the fiscal manipulation is more likely to be financed through current expenditures than capital ones, which mostly depend upon external grants and therefore are less concerned by discretionary fiscal policy. The non-observance of a PBC on capital spending is also confirmed by Vergne (2009) in the case of developing countries. The author found that during election-years, public spending shifts towards more visible current expenditures, in particular wages and subsidies, and away from capital expenditures. Three other variables can be used to test the PBC in developing countries. For example, O’Mahony (2011) used the change in government debt as dependent variable. The main drawback with this measure is that changes in government debt can be due to debt restructuring and debt cancellation episodes, or simply changes in the composition of the debt portfolio. Ehrhart (2009) tested the existence of PBC on government tax revenues and found that the manipulation only holds in the case of indirect tax revenues (tax revenues on international trade and taxes on goods and services). Given the strong heterogeneity amongst our sample of developing countries regarding the importance of indirect taxes in total taxes (some countries are resource rich, some have the VAT, some are landlocked, etc), we prefer to base our estimates of the PBC using government spending, which is the main instrument of fiscal policy in developing countries.



directly taxed by governments, and they do not provide incentives for politicians to behave strategically before elections in the same way.<sup>2</sup>

For what regards their impact of remittances on the PBC, two opposite mechanisms are to be highlighted.

On the one hand, the recipient households can substitute public goods by private goods financed by remittances and therefore lose interest in public affairs (Abdid, Chami, Dagger and Montiel, 2012).<sup>3</sup> Remittances play also an insurance role (Combes and Ebeke, 2011) that can be a substitute for a publicly funded social security system. When households are less involved in the monitoring of public policies, they search less information and hence become more vulnerable to electoral manipulation. In our model, this moral hazard problem generated by remittances should amplify PBC by decreasing the political cost of manipulation.

On the other hand, remittances can improve the government accountability thereby reducing the opportunity costs of political participation (Tybursky, 2012). Likewise, remittances can undermine the clientelist system by ensuring financial independence to households. Weaker clientelist relationships leave room for the emergence of a political opposition that inflates the cost of electoral manipulation for the incumbent (Pfütze, 2012).

Remittances will dampen or inflate the political cost of manipulation, implying that their net effect on the PBC is a matter of empirics: positive is manipulation becomes easier, negative in the opposite case. The empirical analysis is developed in the subsequent sections.

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<sup>2</sup> Nevertheless, a part of remittances could be indirectly seized by the governments through the broadening of the VAT base.

<sup>3</sup> In the opposite way, it can be argued that public goods could be complements rather than substitutes for private goods. For instance public goods could raise the rate of return on private investment financed by remittances. Nevertheless, remittances which allow reducing the household consumption instability (Combes and Ebeke, 2011) appear rather as a source of private consumption financing. Private education or health spending could achieve the same function than public spending.

### 3. Baseline estimates of the effects of remittances on the magnitude of the political budget cycle in Low Income countries

#### 3.1. Baseline Specifications

The following dynamic panel models allow testing the hypothesis according to which the political budget cycle (PBC) depends on the dependency upon remittances.

$$G_{i,t} = \sum_{j=1}^p \rho_j G_{i,t-j} + \theta_1 E_{i,t} + \theta_2 (E_{i,t} \times R_{i,t}) + \phi R_{i,t} + X'_{i,t} \Gamma + u_i + \epsilon_{i,t} \quad [1]$$

where  $G$  represents the government consumption-to-GDP ratio in each country  $i$  and year  $t$ ,  $E$  is the election dummy (taking 1 during the election year and 0, otherwise),  $R$  is the initial level of remittances (average remittance-to-GDP ratio over the past three years),  $X$  is the matrix of control variables, and  $u_i$ , the country fixed effects, respectively.  $\epsilon_{i,t}$  is the error term. Equation [1] allows testing the hypothesis that the PBC on government expenditures would be lower as the size of remittance inflows increases.

Therefore,  $\theta_1$  identifies the magnitude of the PBC for non-remittances dependent economies whereas  $\theta_1 + \theta_2 R_{i,t}$  denotes the magnitude of the PBC conditional on the strength of the remittance-dependency. The conditional PBC hypothesis implies a positive sign for  $\theta_1$ . The sign of  $\theta_2$  depends on the net effect of remittances, which is negative (positive) if remittances decrease (increase) the cost of manipulation. Through the interactive term, the marginal impact of elections on government consumption depends upon remittances:

$$\frac{\partial G_{i,t}}{\partial E_{i,t}} = \theta_1 + \theta_2 R_{i,t}$$

If  $\theta_1$  and  $\theta_2$  have opposite signs, a threshold level of remittance-to-GDP ratio arises:

$$\frac{\partial G_{i,t}}{\partial E_{i,t}} = \theta_1 + \theta_2 R_{i,t} = 0 \rightarrow R^* = \frac{-\theta_1}{\theta_2}$$

$R^*$  measures the minimum remittances ratio required for a full neutralization of the PBC.

We follow Brender and Drazen (2005), and Shi and Svensson (2006) to specify Equation [1] as a standard dynamic panel data model and for the choice of control variables. We use up to three lags of the dependent variable as this allows us to get rid of the serial correlation in the residuals of the model. The presence of lagged dependent variables and the country-specific effects render the Ordinary Least Squares estimator (OLS) biased. Fixed-Effects (FE) estimators can eliminate the country-specific effect. However, the bias caused by the inclusion of lagged dependent variables remains (see Nickell, 1981; Kiviet, 1995). Since the average number of observations across countries in our sample is 16, the bias of the FE estimator may be non-negligible. In order to avoid these problems, we adopt the System-GMM estimator developed for dynamic panel data by Blundell and Bond (1998). Equations in levels and the equations in first differences are combined in a system and estimated with an extended System-GMM estimator which allows for the use of lagged differences and lagged levels of the explanatory variables as instruments. Furthermore, using initial remittances over the past three years reduces the potential endogeneity of remittances. In the framework, all the explanatory variables including the remittance variable and the interaction terms are treated as predetermined. Two specification tests check the validity of the instruments. The first is the standard Sargan/Hansen test of over-identifying restrictions. The second test examines the hypothesis that there is no second-order serial correlation in the first-differenced residuals.<sup>4</sup>

The matrix of control variables in Equation [1] is chosen following Rodrik (1998). It includes variables such as trade openness, per capital real income, demographic dependency ratio and inflation. The model also allows controlling for cyclical conditions via the GDP growth rate variable and financing constraints through foreign aid.

### **3.2. Data**

Economic data come from various sources. For all the countries in the sample, the election dummy is drawn from the National Elections across Democracy and Autocracy (NELDA) dataset compiled and discussed in Hyde and Marinov (2012). The NELDA dataset provides detailed information on all election events from 1960-2010. In this paper we follow

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<sup>4</sup> To deal with the well-known problem of instrument proliferation raised by the system-GMM estimator (Roodman, 2009), the matrix of instruments is collapsed and the number of lags is always set at a level which ensures that the number of instruments do not exceed the number of cross sections.

Shi and Svensson (2006) and only include legislative elections for countries with parliamentary political systems and executive elections for countries with presidential systems. Our sample of countries consists of Low Income and Lower Middle Income countries, according to the World Bank definition. It covers more than 70 countries and around 245 elections are retained in the analysis over the period 1990-2010.

Remittance data are drawn from the World Development Indicators dataset. The variable records the money sent back at home by migrants living abroad as well as employee compensation, and finally migrants' wealth transfers between countries. This broad definition is preferred since it maximizes the number of countries for which it's possible to gather sufficient information regarding remittances. Moreover, we do not expect one particular type of remittances to have distinctive effects on PBC. The government consumption-to-GDP is drawn from the IMF World Economic Outlook database, whereas all the remaining explanatory variables are drawn from the World Development Indicators.

### **3.3. Baseline Results**

Table 1 shows the estimation results of Equation [1]. In the first two columns, a linear effect of elections on government spending on current and capital goods is estimated, respectively. The purpose of these first investigations is to validate the form of PBC on government spending in the current sample. The models do not include therefore neither the remittance variable, nor the interaction term of elections crossed with remittance inflows. Results indicate that the occurrence of national elections leads on average to a 0.8 percentage point increase in government current expenditures during election years compared to other years (column 1).<sup>5</sup> The increase in government consumption during election years is substantial. Indeed, for an in-sample mean of government consumption-to-GDP around 16 percent of GDP, the shift in government spending during election years represents an increase of about 5 percent relative to the mean.

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<sup>5</sup> Regarding the effect of elections on public investment, results indicate a negative although statistically insignificant effect of elections.

Table 1. Baseline estimates of the conditional political budget cycle in Low Income Countries

Dependent variable:	System- GMM Cons. (1)	System- GMM Inv. (2)	System- GMM Cons. (3)	Diff- GMM Cons. (4)	System- GMM+IV Cons. (5)
Election dummy	0.792** (2.35)	-0.093 (0.50)	0.913*** (2.68)	0.635** (2.15)	0.799** (2.33)
Election * Remittance-to-GDP			-0.086** (2.19)	-0.052** (2.24)	-0.083** (1.99)
Remittance-to-GDP			-0.096 (0.71)	-0.009 (0.11)	0.023 (0.25)
Observations	1142	1038	996	925	996
Countries	70	66	68	68	68
Joint significance of election coefficients: P-value			0.021	0.067	0.057
Remittance threshold (percent of GDP)			10.7	12.2	9.6
Threshold's significance: P-value			.	.	.
Countries at and above the threshold			9	9	10
Percentage of countries at and above the threshold			13.2	13.2	14.7
m1:p-value	0.001	0.000	0.001	0.033	0.000
m2:p-value	0.09	0.657	0.261	0.409	0.275
Hansen OID test: P-value	0.182	0.206	0.262	0.446	0.184
Number of instruments	37	51	45	41	46

Notes: All equations are estimated using panel data estimators and include a full set of control variables (GDP per capita, GDP growth rate, inflation rate, population under 14, foreign aid-to-GNI, and trade openness). Cons: Government consumption as percentage of GDP; Inv: Public investment as percentage of GDP. In column 4, the GMM estimator is augmented with an external instrument for remittances which is the GDP per capita in migrant host countries. Robust and absolute t statistics in parentheses.

\* p<0.10, \*\* p<0.05, and \*\*\* p<0.01.

Column 3 of Table 1 estimates the full specification described in Equation [1]. The election effect is conditional upon the size of the remittance dependency. Results indicate a statistically significant non-linearity in the effect of elections on government consumption at 10.7 percent level of significance (see the test of joint significance of the election coefficients at the bottom of Table 1). The coefficient associated with the additive term of the election dummy is positive and statistically significant whereas the coefficient associated with the interaction of election crossed with the remittance ratio exhibits a negative and significant sign. These results can be interpreted as follows: For a hypothetical Low Income country for which the remittance ratio is 0, the magnitude of the PBC is 0.9 percentage point of GDP. As long as the remittance-dependency increases, the PBC is significantly lower and is fully cancelled out at a remittance threshold of 10.7 percent of GDP. This corresponds to about 14 percent of the country-year observations in the sample used in column 3. Over the period

1990-2010, 9 countries in the sample posted an average remittance-to-GDP ratio exceeding 10.7 percent of GDP (Albania, Cape Verde, Haiti, Lesotho, Moldova, El Salvador, and Yemen).

Similar results are obtained in column 4 where Equation [1] is estimated using the Difference GMM instead of the System-GMM technique. The Difference GMM allows estimating the model using moment conditions applied to the equation in first differences only. Results indicate a remittance threshold around 12 percent of GDP.

In column 5, we augment the standard System-GMM framework (which uses “ready – made” instruments– the lagged values of the explanatory variables themselves as instruments) by adding an external instrument which is suggested by the recent empirical literature of remittances (Acosta et al., 2009; Aggarwal et al., 2011): economic conditions in migrant host countries proxied by the GDP per capita in migrant host countries.<sup>6</sup> It’s now standard in the empirical literature to augment the precision of the GMM tool by adding external instruments (Acosta et al., 2009). The addition of external sources of exogenous variations should go some way towards vitiating the potential “weak instruments” problem that often arises in the context of traditional GMM. Results shown in column 5 do not reject the existence of a non-linearity in the effect of elections on government spending and the threshold estimation is almost similar to the previous assessment.

We have established so far that remittance inflows tend to play a role in dampening the size of the PBC in Low Income countries by reducing the sensitivity of government spending to the occurrence of national elections. The next section tests the robustness of these findings.

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<sup>6</sup> The GDP per capita of migrant host countries is computed as the weighted sum of GDP per capita of all potential destination countries with being the bilateral migration shares extracted from the Global Bilateral Migration Database published by the World Bank. Since the remittance variable enters the model as a rolling average over past three years, the external instrument is also computed to match the same exact frequency.

## 4. Robustness Checks

### 4.1. Alternative Non-Linear Specifications

#### *Centering the remittance variable*

This section proposes an alternative functional form to test the PBC conditional on remittance inflows. One of the main drawbacks of the specification assumed in Equation [1] is that the coefficient  $\theta_1$  identifies the extreme case where remittance inflows equal 0 thus,  $\theta_1$  does not represent an average impact.<sup>7</sup> One way to overcome this restriction is to specify a model in which the remittance variable is centered on its sample mean (see Wooldridge, 2010; and Fafchamps and Vicente, 2009, for a detailed justification of this strategy). Equation [2] takes the following form:

$$G_{i,t} = \sum_{j=1}^p \rho_j G_{i,t-j} + \theta_3 E_{i,t} + \theta_4 E_{i,t} \times [R_{i,t} - \bar{R}] + \sigma [R_{i,t} - \bar{R}] + X'_{i,t} \Gamma + u_i + \epsilon_{i,t} \quad [2]$$

where  $\bar{R}$  is the in-sample mean of the remittance-to-GDP ratio (the average is about 5.8 percent of GDP). In this specification,  $\theta_3$  identifies the magnitude of the PBC for the “average” remittance-dependent country and  $\theta_3 + \theta_4 [R_{i,t} - \bar{R}]$ , represents the marginal impact of elections around the remittance average. We also expect  $\theta_3 < \theta_1$ . Indeed, if our assumption that remittances help to dampen the PBC is valid, one would expect the magnitude of the latter to be lower for the average remittance dependent country ( $\theta_3$  in Equation [2]), compared to a non-remittance-dependent country ( $\theta_1$  in Equation [1]).

Results are shown in Table 2. The main hypothesis of the paper is not statistically rejected by the data. The magnitude of the PBC on government spending is robustly dampened by the size of the remittance dependency. For the average remittance-dependent economy, government consumption shifts by 0.4 percentage point of GDP during election years compared to the 0.9 percentage point of GDP estimated from Equation [1] in the case of non-remittance dependent economies. For countries receiving more than the in-sample average of remittances, the PBC is even more reduced as indicated by the coefficient

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<sup>7</sup> Imposing such a restriction could be misleading insofar as the in-sample remittance data do not exactly include 0. The minimum value of the remittance-to-GDP ratio across the specifications is 0.004 percent of GDP.

of the interaction term of elections crossed with the centered remittance variable which exhibits a negative and significant sign.

The threshold level of remittances at which the PBC is fully neutralized stands at 12.5 percent of GDP (13.2 percent of the countries fall into this category).

Table 2. Alternative specifications for threshold determination

	(1)	(2)
Election dummy	0.415* (1.72)	0.797** (2.49)
Election * Centered Remittance-to-GDP	-0.062** (2.28)	
Centered Remittance-to-GDP	-0.217 (1.05)	
Election * $1[\text{Remittance-to-GDP} > 10.1\%]$		-1.898*** (2.73)
$1[\text{Remittance-to-GDP} > 10.1\%]$		-1.064 (1.27)
Observations	996	996
Countries	68	68
Joint significance of election coefficients: P-value	0.021	0.013
Remittance threshold (percent of GDP)	12.5	10.1
Threshold's significance: P-value	.	.
Countries at and above the threshold	9	10
Percentage of countries at and above the threshold	13.2	14.7
m1:p-value	0.003	0.001
m2:p-value	0.279	0.209
Hansen OID test: P-value	0.27	0.317
Number of instruments	55	45

Notes: The dependent variable is the government consumption as percentage of GDP. Models are estimated using the System-GMM estimator and include a full set of control variables (GDP per capita, GDP growth rate, inflation rate, population under 14, foreign aid-to-GNI). Robust and absolute t statistics in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , and \*\*\*  $p < 0.01$ .

### *Rolling estimations*

An alternative model for the conditional PBC is implemented with rolling estimations for the different values taken by the remittance ratio. A new variable  $d_{i,t}^R$ , in interaction with the election dummy variable was specified;  $d_{i,t}^R$  is equal to 1 if the country has a remittance ratio greater than  $R^*$  and 0 otherwise. This methodology for threshold determination in the case of endogenous regressors under a dynamic panel data framework has previously been



implemented by Masten et al. (2008) and Chami et al. (2009).<sup>8</sup> The following equation is specified:

$$G_{i,t} = \sum_{j=1}^p \rho_j G_{i,t-j} + \theta_5 E_{i,t} + \theta_6 (E_{i,t} \times d_{i,t}^R) + \delta d_{i,t}^R + X'_{i,t} \Gamma + u_i + \epsilon_{i,t} \quad [1]$$

where  $d_{i,t}^R = \mathbf{1}[R_{it} \geq R^*]$ .

The top 5% and bottom 5% of the observations of the remittance ratio were dropped to ensure feasible identification of the threshold. Remittance-to-GDP thresholds were explored in increments of 0.5 percent of GDP. Each equation corresponding to a different threshold was estimated by the System-GMM method. Under the System-GMM framework, the optimal threshold is the one that maximizes the overidentification Hansen test p-value and the second-order autocorrelation p-value. Testing nonlinear effects simply refers to the test of the null hypothesis that the coefficient for the interactive variable  $\theta_6$  is equal to zero.

The optimal cutoff which maximizes the Hansen test and second-order autocorrelation test p-values is a level of remittance ratio equal to 10.1 percent of GDP (Table 2, column 2). Almost 15 percent of the countries meet this threshold. The corresponding estimation is shown in Table 2, column 2. All the diagnostic tests associated with the System-GMM estimator also validate the specification. The table reports a significant and negative impact of the interactive term and a positive and significant effect of the additive term of elections. This uncovers the existence of two regimes. The first regime is characterized by a higher PBC, around 0.8 percentage point of GDP, for a remittance ratio below 10 percent of GDP). The second regime (remittance ratio exceeding 10 percent of GDP) is characterized by a lower and almost null marginal impact of elections on government spending (the sum of coefficients associated with the election dummy is not statistically different from 0).<sup>9</sup>

<sup>8</sup> Another approach might consist of estimation using the Caner and Hansen (2004) methodology but with the assumption that the threshold variable is exogenous in a non-dynamic model. However, these restrictions seem very difficult to apply in our context.

<sup>9</sup> The standard error of the threshold level is computed using a *delta* method that is by taking a first-order Taylor approximation around the mean. Notice that in small samples, the delta method is known to result in excessively large standard errors.

## **4.2. Endogeneity of election timing**

A potential critique of the results presented so far could be that treated elections as predetermined in the GMM specification will not entirely solve the potential endogeneity of this variable with regard to fiscal policy. For example, both timing of elections and fiscal policies could be influenced by a number of unobserved time-varying factors (crises, commodity price shocks, natural disasters) which are not included in the models. Another potential problem is that the incumbent politicians may strategically choose the timing of elections conditional on fiscal policy outcomes, causing a reverse causality problem. As discussed in Brender and Drazen (2005) and Shi and Svensson (2006), one way to address the endogeneity bias from reverse causation or from shocks affecting both the election date and the fiscal variable is to separate out those elections whose timing is pre-determined. We do this by looking at the constitutionally determined election interval taking as pre-determined those elections which were held either at the fixed interval or within the expected year of the constitutionally fixed term. We follow the definition used in the NELDA database and examine whether these elections were held early or late relative to the date they were supposed to be held per established procedure. Endogenous elections are the ones that do not occur at a date set by the constitution.

We checked the robustness of our results in three ways. First, a model similar to Equation [1] is specified with two election dummies (predetermined and endogenous elections). Second, a revised version of Equation [2] is estimated where the two election dummies enter the model and the remittance variable centered on its mean. Third, the conditional PBC is examined by running rolling regressions augmented with the two election dummies to fine-tune the remittance threshold as in Equation [3].

Results of all these investigations are presented in Table 3. In all three cases, the interaction term of predetermined elections crossed with the remittance variable exhibits a significant and negative sign. The threshold levels associated with remittances are relatively lower than the previous assessments: They vary between 6 and 7 percent of GDP across columns 1 and 3. It's worth noting that in the case of threshold determined after centering the remittance variable in the model (column 2) the coefficient associated with the additive term of predetermined elections is positive but statistically insignificant. This suggests that at already a remittance ratio close to the remittance sample mean, the PBC is no longer at play. This is quite different from the results obtained in the column 1 of Table 2. Therefore, it

seems that accounting for the endogeneity of the election timing matters in the estimation of the conditional PBC.

Table 3. Accounting for the endogeneity of elections

	(1)	(2)	(3)
Predetermined election dummy	0.805** (2.11)	0.103 (0.48)	0.582* (1.82)
Predetermined election * Remittance-to-GDP	-0.122** (2.50)		
Predetermined election * Centered Remittance-to-GDP		-0.119*** (2.79)	
Predetermined election * <b>1</b> [Remittance-to-GDP>7.6%]			-1.423** (2.06)
Endogenous election dummy	0.731 (1.14)	0.586 (0.96)	0.468 (0.79)
Endogenous election * Remittance-to-GDP	-0.029 (0.57)		
Endogenous election * Centered Remittance-to-GDP		-0.009 (0.20)	
Endogenous election * <b>1</b> [Remittance-to-GDP>7.6%]			-1.577 (0.90)
Remittance-to-GDP	-0.034 (0.30)		
Centered Remittance-to-GDP		-0.069 (0.46)	
<b>1</b> [Remittance-to-GDP>7.6%]			0.000 (0.00)
Observations	975	975	975
Countries	68	68	68
Joint significance of election coefficients: P-value	0.043	0.020	0.099
Remittance threshold (percent of GDP)	6.6	6.7	7.6
Threshold's significance: P-value	.	.	.
Countries at and above the threshold	18	18	13
Percentage of countries at and above the threshold	26.5	26.5	19.1
m1:p-value	0.003	0.003	0.002
m2:p-value	0.32	0.318	0.294
Hansen OID test: P-value	0.188	0.280	0.310
Number of instruments	53	53	53

Notes: The dependent variable is the government consumption as percentage of GDP. Models are estimated using the System-GMM estimator and include a full set of control variables (GDP per capita, GDP growth rate, inflation rate, population under 14, foreign aid-to-GNI). Robust and absolute t statistics in parentheses.

\* p<0.10, \*\* p<0.05, and \*\*\* p<0.01.

## **5. Conclusion**

Recent literature has highlighted that remittances are a very significant macro-phenomenon: they have a big impact on growth, poverty, investment and consumption. Contrary to ODA, remittances go directly into the pockets of the recipients. While ODA has been shown to increase directly the political benefit for a government to be re-elected, remittances have no direct link with the incentives for political manipulation.

This paper makes the assumption that there is an indirect link. Remittances may increase the political indifference of voters with respect to the public affairs, but they can also be a vehicle of idea and norms. In the former case, the political cost of manipulating is reduced, while in the latter case, it is inflated. The net effect is a matter of empirics.

This paper addresses the question of how much government current spending in percentage of GDP will increase or decrease prior to an election, when remittances interact with the timing of an election. The results are following: for a hypothetical Low Income country for which the remittance ratio is nil, the magnitude of the PBC is 0.9 percentage point of GDP. As long as the remittance-dependency increases, the PBC is reduced up to the point where it is fully cancelled out at a remittance threshold of 10.7 percent of GDP. In other words, we reveal the existence of two regimes. The first regime is characterized by a higher PBC, around 0.8 percentage point of GDP, for a remittance ratio below 10 percent of GDP). The second regime (remittance ratio exceeding 10 percent of GDP) is characterized by a lower and almost null marginal impact of elections on government spending (the sum of coefficients associated with the election dummy is not statistically different from 0). More globalized countries are therefore less exposed to political manipulation.

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